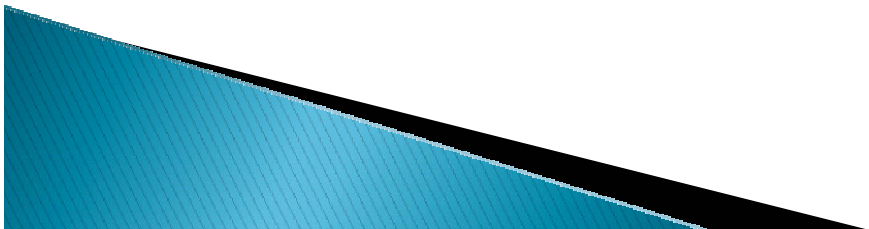
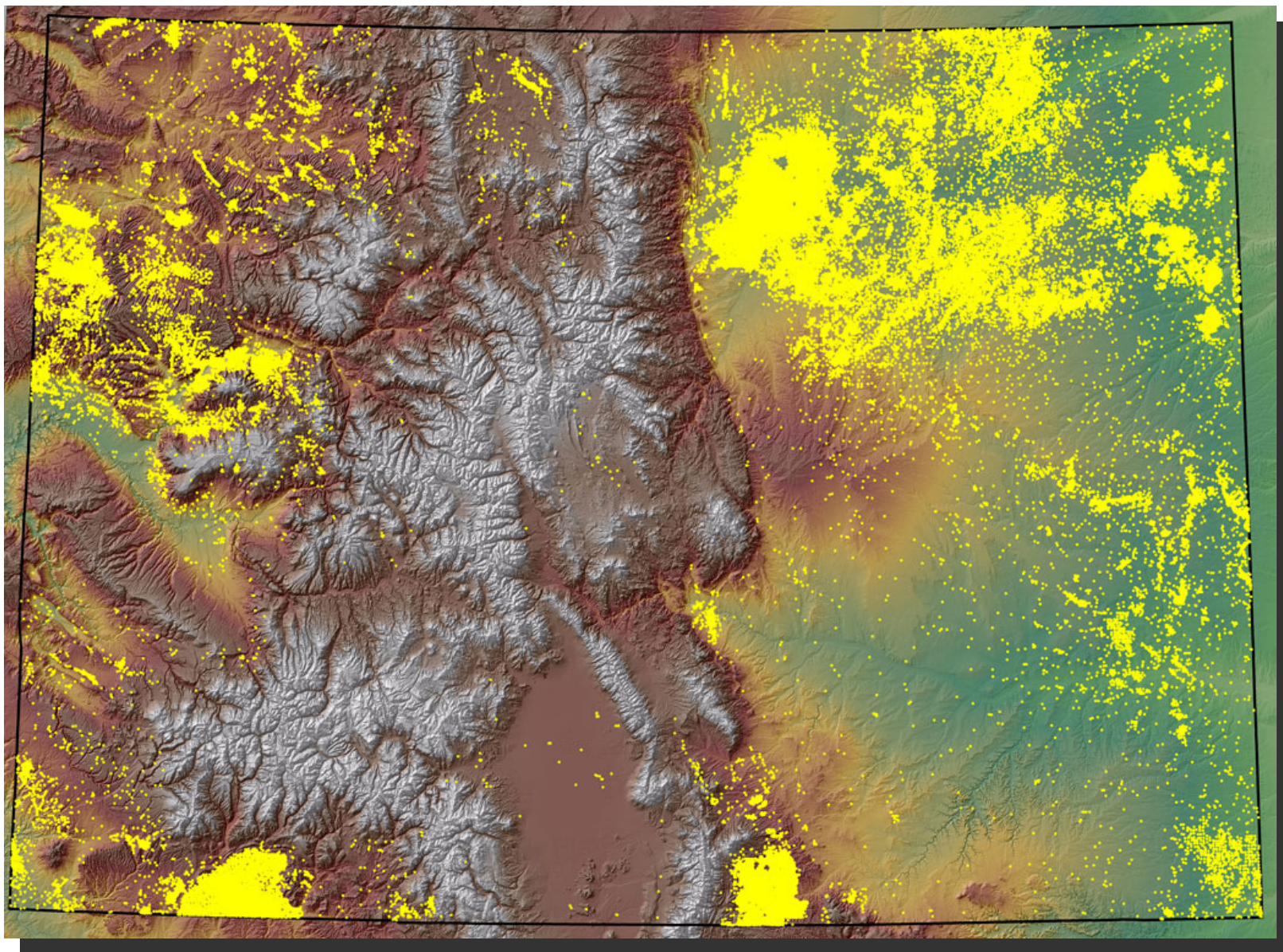


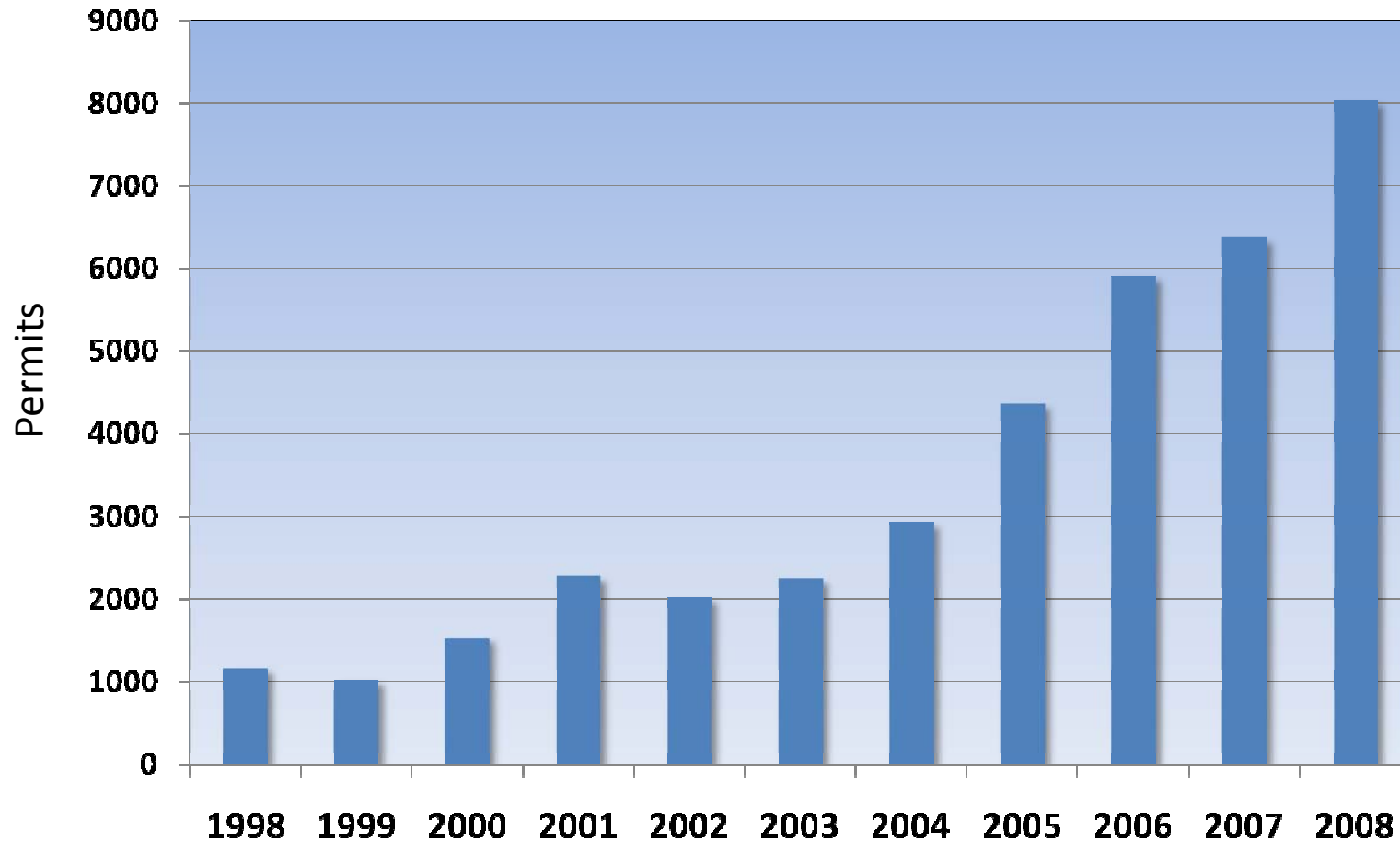
Challenges with Energy Development in Colorado

WAFWA Plenary Meeting
Newport Beach, Calif

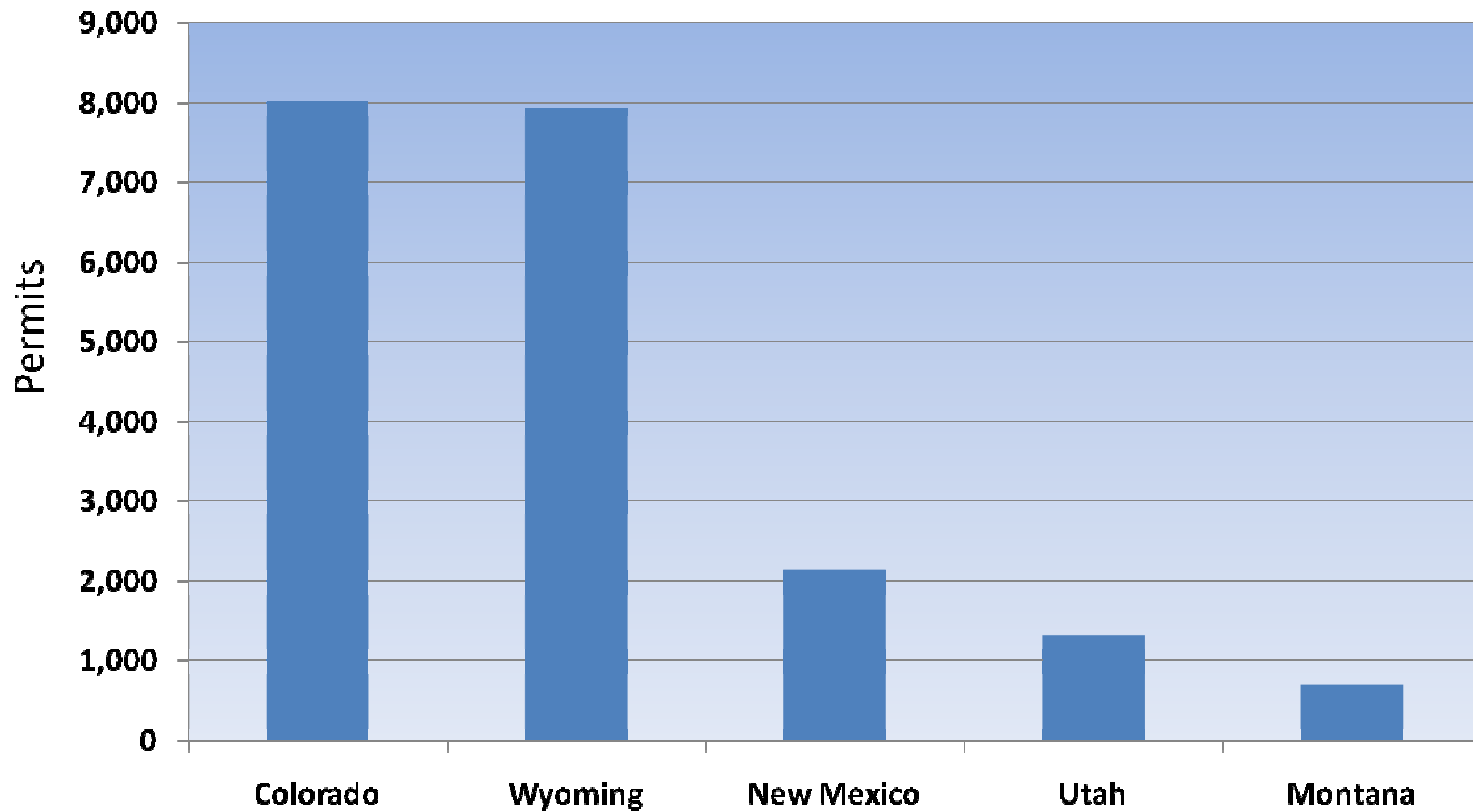




Colorado supports a lot of oil and gas development



In 2008, Colorado issued the most drilling permits in the Rocky Mountains.



State oil & gas permitting in 2008

• Texas	20,980 permits
• Colorado	8,027
• Wyoming	7,938
• Pennsylvania	7,232
• Oklahoma	6,220
• Kansas	5,926
• Louisiana	2,350
• Ohio	2,300
• New Mexico	2,152

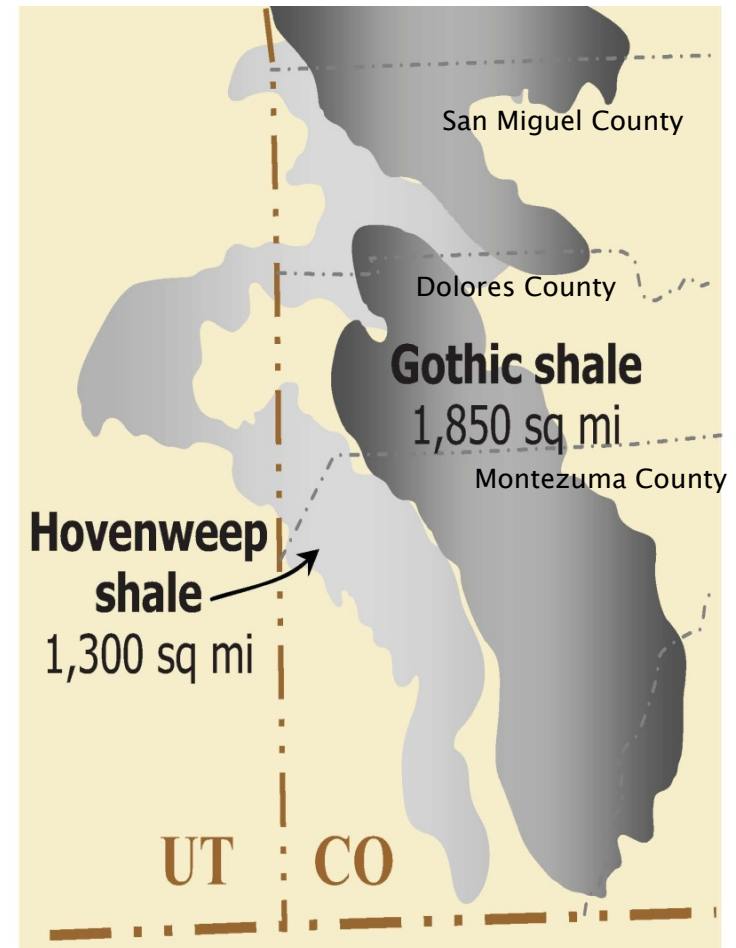
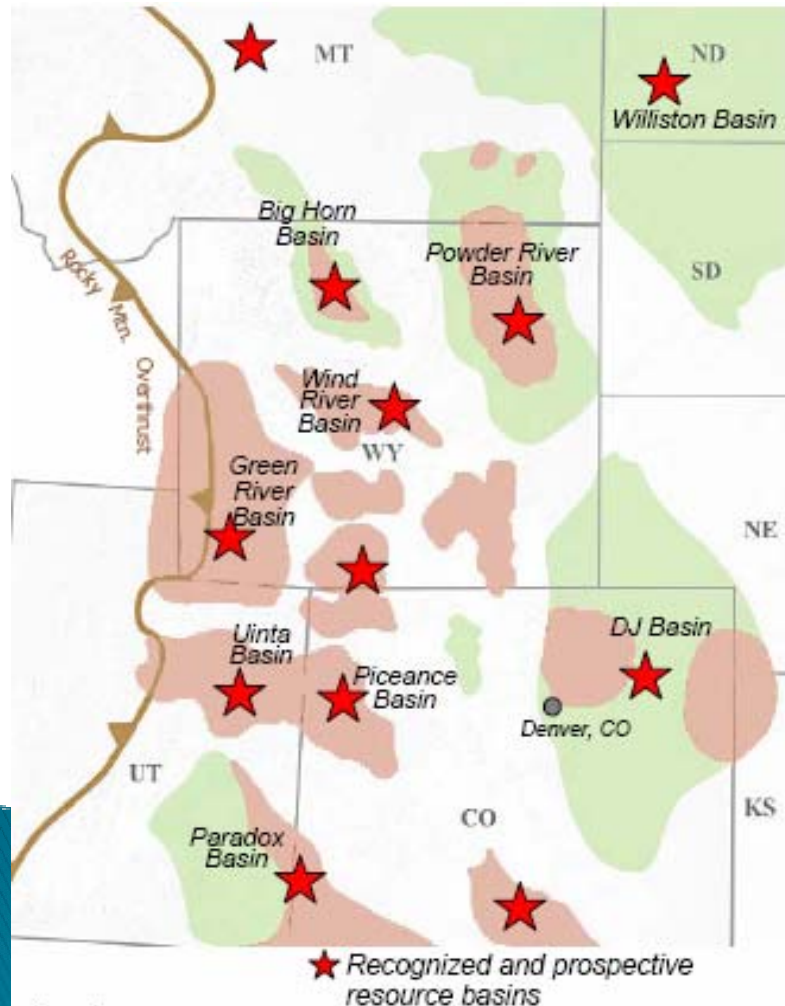
In 2008, about 3,500 new wells
were drilled in Colorado



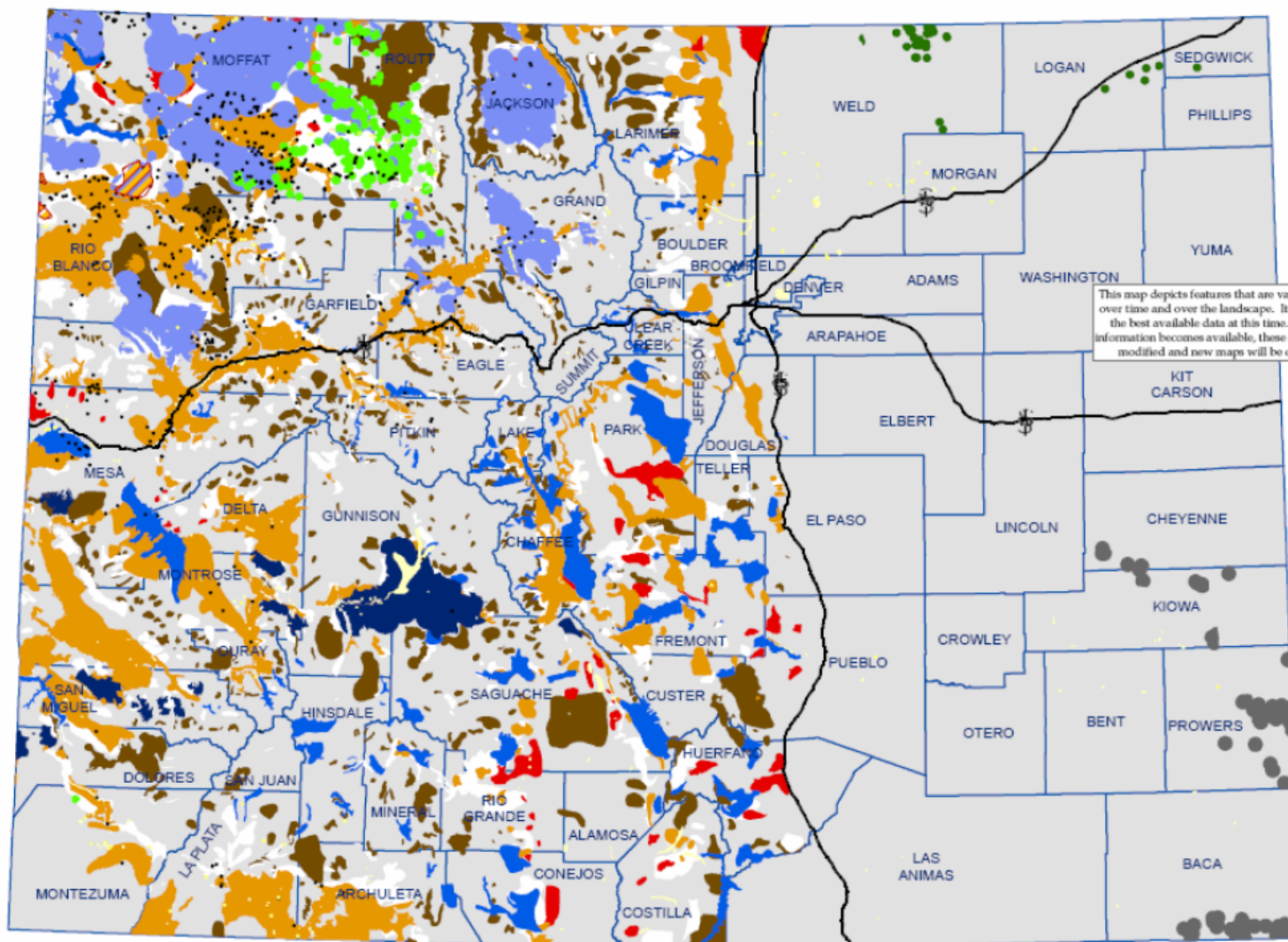
Matt McClain, Rocky Mountain News © 2007



Rocky Mountain Oil and Gas Basins and Relative Size of Paradox Basin Shale Gas Play

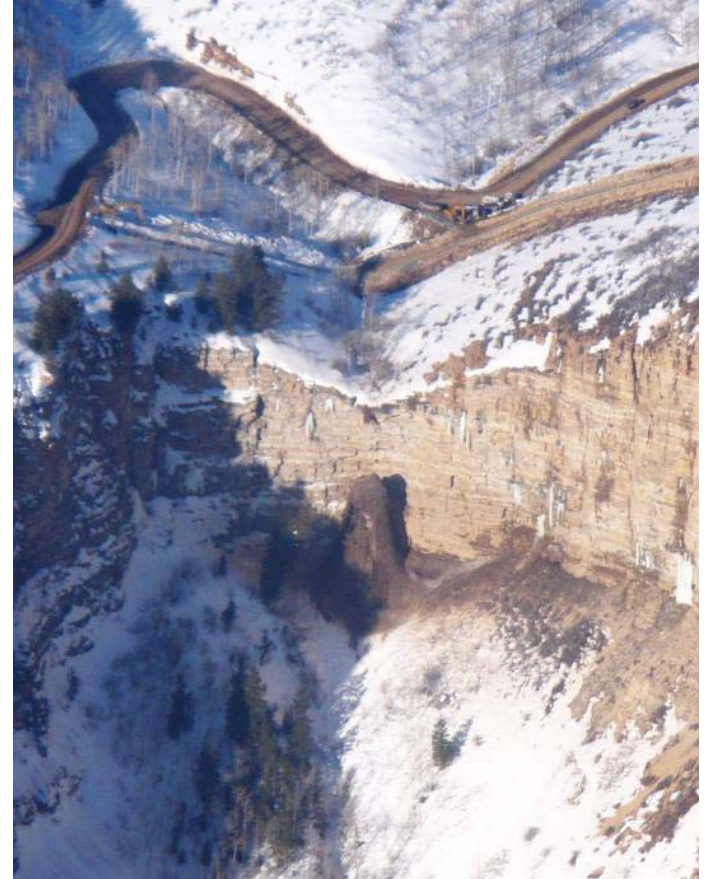


* Source: Bill Barrett Corp.



As drilling has increased, so have citizen concerns

- Spills & releases
- Seeps & well contamination
- Stormwater runoff
- Split-estate issues
- Odors
- Cumulative impacts
- Wildlife impacts
- Piecemeal planning



Parachute Creek, Colo. 2008

Source: Skytruth

HB 1341 & 1298:

- In 2007, the General Assembly declared that it is in the public's interest to foster the **responsible, balanced development** of Colorado's oil and gas resources ...
- **consistent with the protection of public health, safety, and welfare...**
- **including protection of the environment and wildlife resources.**

Led to an 18-month, highly contentious rule making process

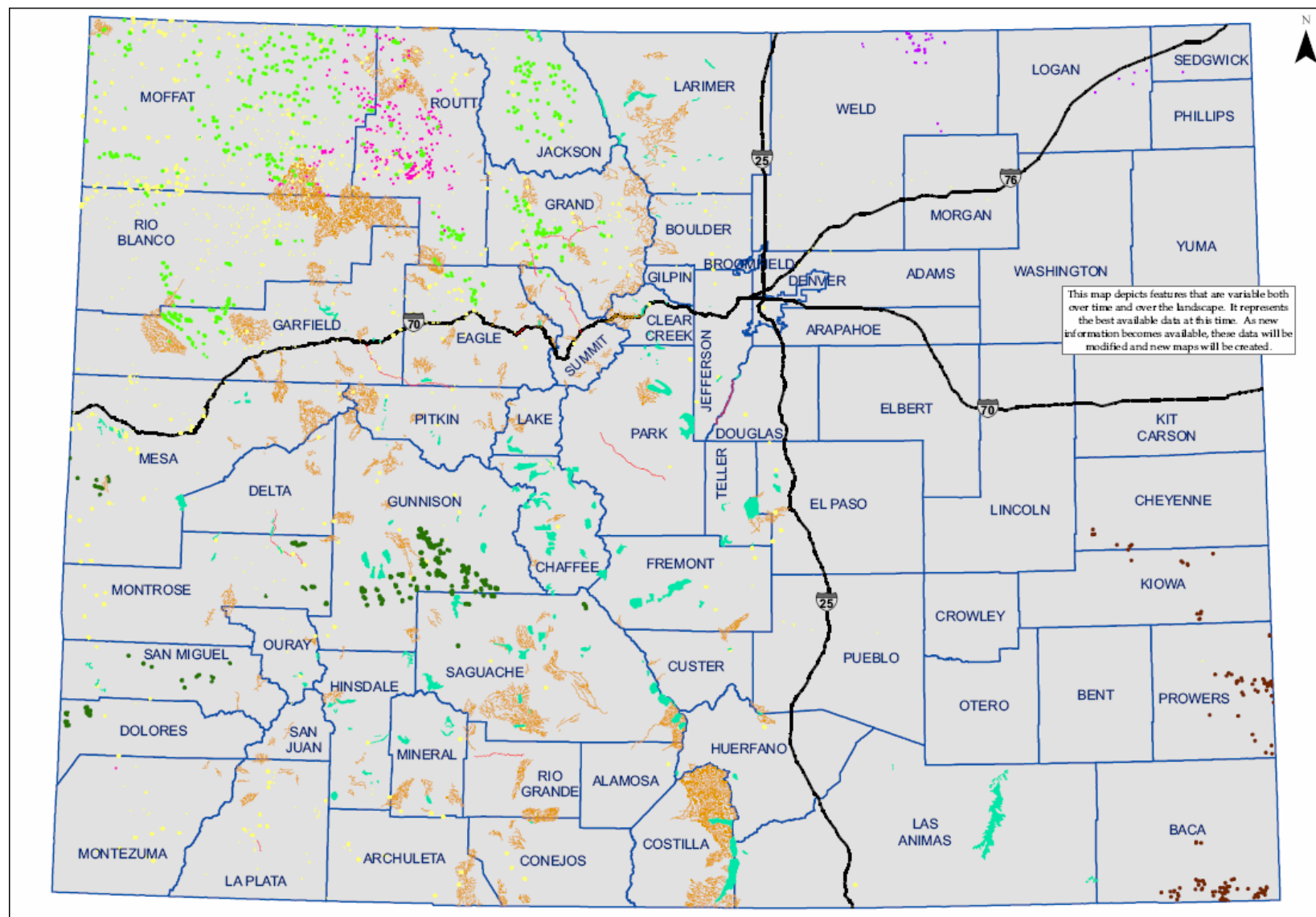
- Mandatory timing restrictions eliminated
- Requirement for wildlife surveys dropped
- The number of species covered cut by 40%
- Additional flexibility added

Sensitive wildlife habitat





- Consultation required between operator, COGCC, DOW and surface owner
- DOW makes recommendations on mitigation to Oil and Gas Commission
- COGCC makes decisions
- State's position that rules apply to Federal mineral as well as Federal surface

Restricted surface occupancy established for critical habitats

- Avoid any surface activities to maximum extent technically & economically feasible
- Can seek to develop alternative mitigation through consultation



This map depicts features that are variable both over time and over the landscape. It represents the best available data at this time. As new information becomes available, these data will be modified and new maps will be created.




-  Gold Medal Streams (300 ft buffer)
-  Raptor Active Nest Sites (Bald and Golden Eagles, Ferruginous Hawk, Osprey, N. Goshawk, Peregrine and Prairie Falcons)
-  Designated Cutthroat Trout Habitat (300ft buffer)
-  Bighorn Sheep Production Areas

Restricted Surface Occupancy All Activities



DRAFT
February 2, 2009

0 10 20 miles

-  Lesser Prairie Chicken Leks
-  Greater Sage Grouse Leks
-  Gunnison's Sage Grouse Leks
-  Plains Sharp-Tailed Grouse Leks
-  Columbian Sharp-Tailed Grouse Leks

Surface owner must consent to any permit specific condition

If surface owner does not consent, COGCC will examine alternatives including:

- off-site mitigation
- mitigation banking
- cash in lieu

If surface owner attempts to abuse the right of consent to prevent drilling, COGCC may issue the permit without wildlife mitigation.

But, you can't solve landscape scale wildlife habitat problems one permit to drill at a time!



Comprehensive drilling plans

- Incentive to engage in landscape-level planning. Planning ahead will help operators identify efficiencies that will limit costs & avoid unnecessary impacts
- Provides opportunity to assess/mitigate cumulative impacts
- Offers operators opportunity to bundle multiple permit applications with one information submittal
- Individual Form 2As not required if CDP substantially satisfies the informational and procedural requirements for a site assessment
- Site permits covered by a CDP will be good for 6 years, rather than 3
- Operators who complete these comprehensive drilling plans can expect expedited decisions on drilling permits



Operators can obtain multi-year planning certainty with approved CDPs.

Companies Pursuing Comprehensive Drilling Plans (Jan. 2009)

	COMPANY	2008 PERMITS
1	Antero Resources	224
2	Bill Barrett Corporation	195
3	BP America	121
4	Chevron	206
5	ConocoPhillips	71
6	Dejour Energy	-
7	Delta Petroleum	236
8	EnCana	547
9	Energen Resources Corp.	18
10	Exxon/Mobil	211
11	Gunnison Energy	6
12	Laramie	60
13	Marathon	95
14	Noble	913
15	Orion	94
16	OXY USA	95
17	Petroleum Development Corporation	422
18	Pioneer Natural Resources	238
19	Questar	1
20	SGI Interests	-
21	Williams	912
	TOTAL	4665

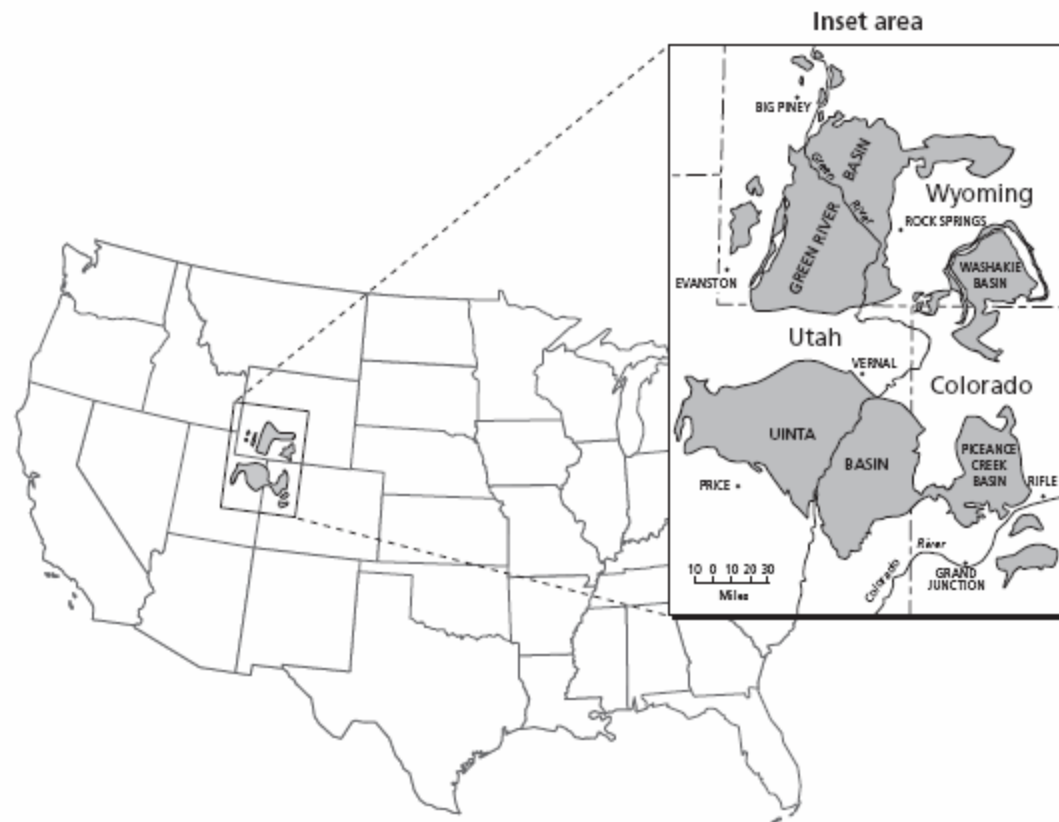
DEPARTMENT OF NATURAL RESOURCES



Oil Shale may be the ultimate game changer:

- 1 million barrels of recoverable oil per acre, 3x known reserves in Saudi Arabia. Piceance Basin holds as much as world's known oil reserves, up to 2.5 million barrels of recoverable oil per acre
- Can mine it, crush it, heat to 1,000 degrees and extract the oil. Expensive, environmentally destructive
- Or, freeze the perimeter, heat the rock 1000 feet down to 700 feet for three years and pump the gas and oil out.

Figure 2.1
Location of the Green River Formation Oil Shale and Its Main Basins



SOURCE: Adapted from Smith, 1980.
RAND MG414-2.1

The wildlife protections are balanced and reasonable.

If it's
feasible
for an
operator
to avoid
drilling
under an
eagle's
nest.....

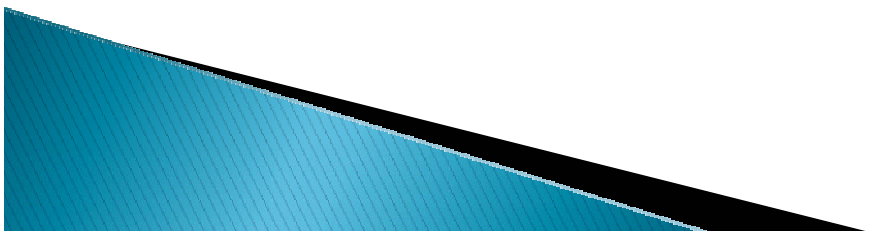


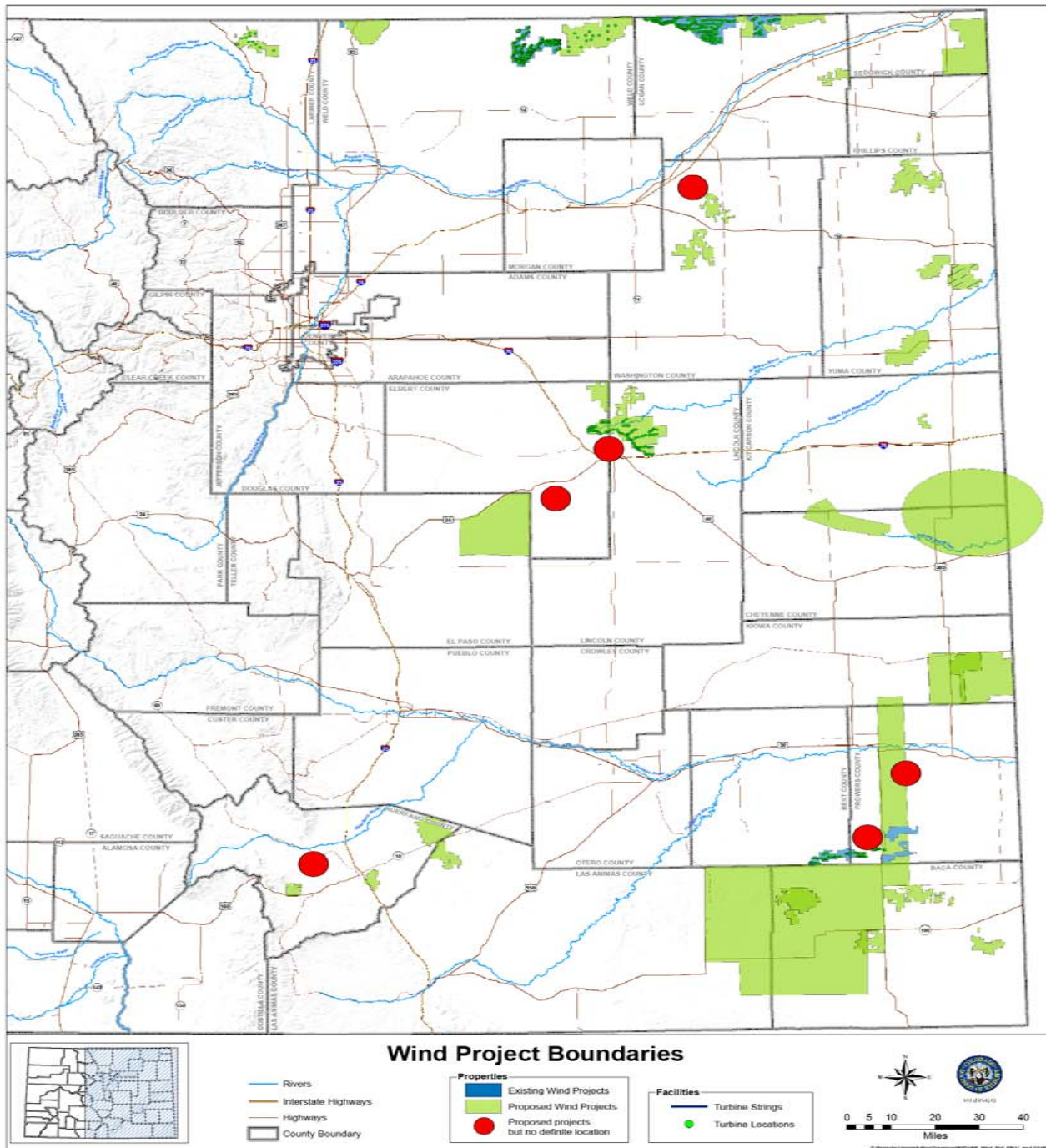
...isn't it
reasonable
to ask them
to do so?

Colorado is facing significant challenges from development of Renewable Energy sources as well:

- ❖ Citizen initiative passed in 2007 which requires regulated utilities to generate 20% of their power from renewable resources by the year 2020 ("20 by 20").

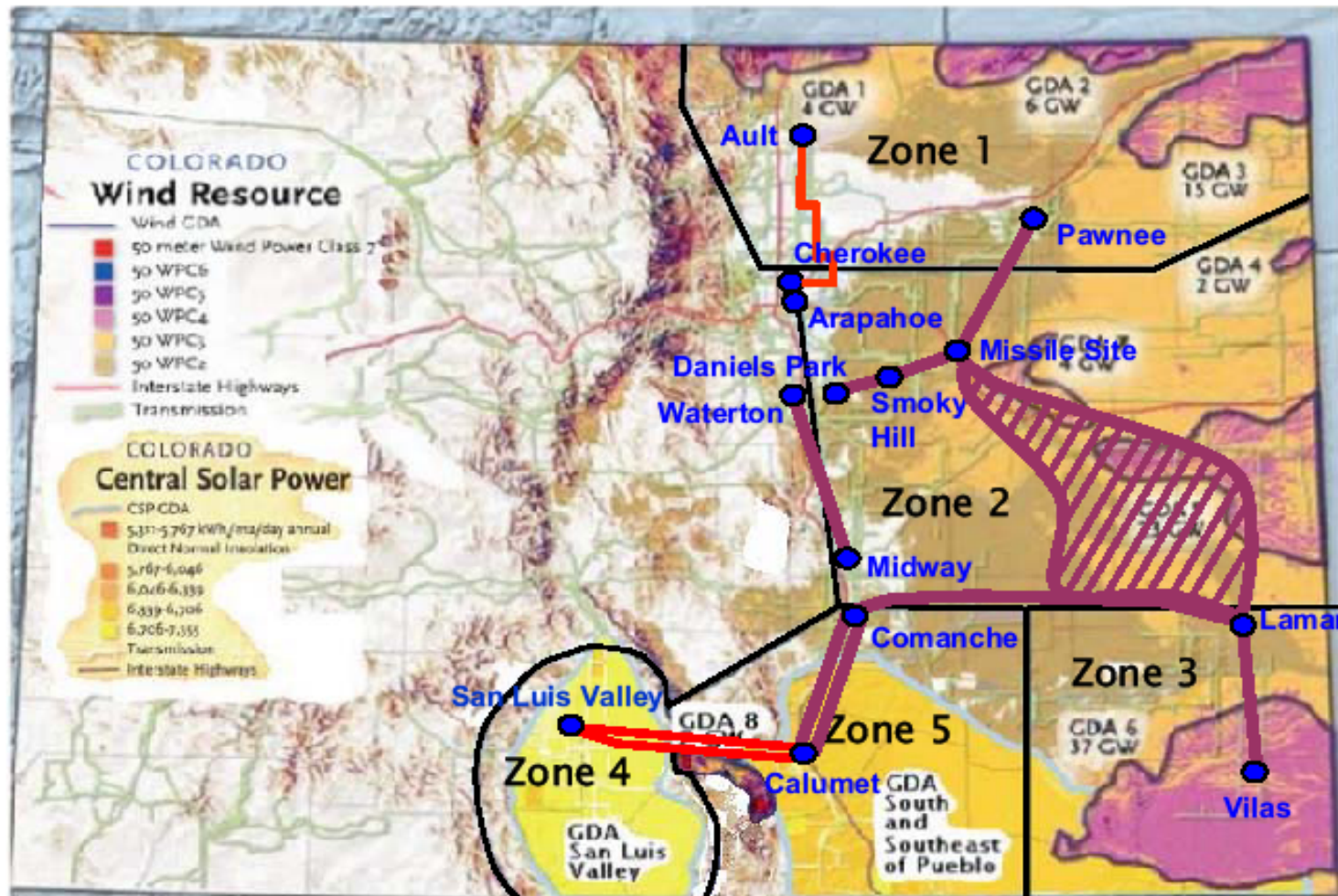
- ❖ Currently at about 10%





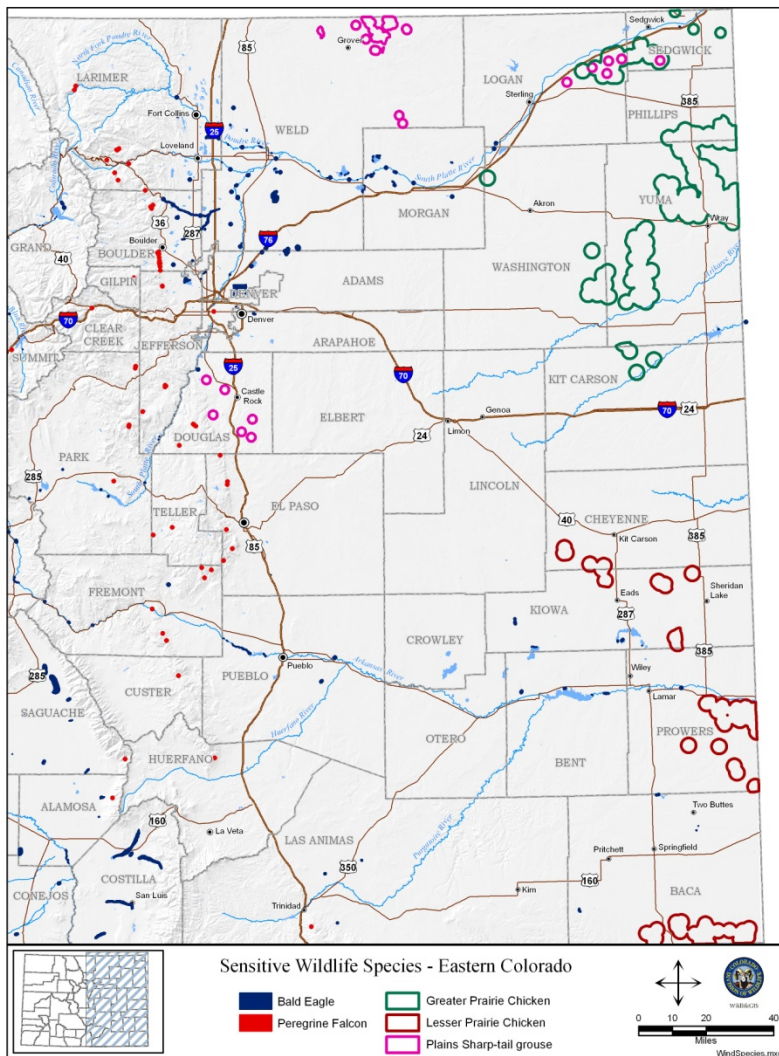
Colorado wind projects, existing and proposed

SB-100 Overall Transmission Plan



Sensitive Wildlife Habitats in Renewable Energy Development Areas

But still, concern about bats, migrating birds, raptors, etc.



What do we need, and how can WAFWA help?

Standardization – across states and with Feds

- Habitat definitions

- Habitat mapping, core areas

- Mitigation practices, BMPS, stipulations

Support, expand WGA WREZ/Wildlife Habitat Council efforts on renewables and future development

Research on impacts, mitigation

Engage sportsmen and other wildlife enthusiasts



What do we need, and how can WAFWA help?

We need a new paradigm on how the States and the Federal Government interact on energy development on public lands.

Maybe something more akin to the Flyway system; Feds still make the decisions but there is a structured process for agreeing on the biology and incorporating policy and socio-biological concerns:

- Tech committee

- Regional Council

- Service Regulatory Committee

